EXHIBIT

Applicant's arguments filed May 24, 2001 have been fully considered but they are not persuasive.

1. Applicants urge that the original Figures 2E, 2F and 2G, now renumbered as Figures 2A, 2B and 2C, show the same type of roughened surface attained by electric arc-spraying as did the original Figures 2A-2C.

Even if the now renumbered Figures 2A-2C (originally, Figures 2E-2G) may show the roughnened surface attained by electric arc-spraying, they still were not "taken at *corresponding* magnification levels after an anchor layer has been electric arc sprayed thereon...".

2. Applicants urge that "layers of catalytic substances disposed at opposites sides of the metal plate are jointed to each other through perforations".

It should be noted that Applicants' claims only require that an anchor be deposited on a carrier and a catalyst layer be deposited on the anchor layer. There is no other requirement, excluding the joining of the catalyst layers on opposite sides of the carrier.

3. Applicants argue that Ishida '281 does not disclose or suggest the application of an electric arc-sprayed metal layer upon a carrier substrate of reticulate configuration as now defined in claim 22.

"Reticulate" configuration is a configuration resembles a network, and as shown in Figure 5 of Ishida '281, the expanded metal does resemble a network, therefore, it is considered as having a "reticulate" configuration, especially when "reticulate configuration" includes both woven and non-woven mesh (note Applicants' response filed May 24, 2001, page 6, third full

paragraph). Applicants have not provided any evidence or reason to show that the substrate, such as the one shown in Figure 5 of Ishida '281) is not a substrate having "reticulate configuration" or "honeycomb monolithic" structure.

4. Applicants argue that the bonding layer in Fukui '455 is formed on the ceramic carrier by chemical vapor deposition.

Granted that is true, Fukui '455 still fairly suggests that a carrier (honeycomb included) which is made of ceramic can be used instead of a metal carrier (note claims 3, 6 and 8) in a catalyst for removing NO_x. Since the carrier in Ishida '281 is also used for removing NO_x, it would have been obvious to one of ordinary skill in the art to use a ceramic carrier, as suggested by Fukui '455. Fukui '455 is not applied to teach the method of forming the anchor layer.

5. Applicants argue that Rondeau '367 does not disclose the use of thermal spraying method to form an anchor layer for catalytic materials.

The use of thermal spraying method as disclosed in Rondeau '367 should not be limited to just the exemplified uses mentioned in Rondeau '367, note the phrase "many other purposes". The motivation to combine Gorynin '302, Rondeau '367 and Ishida '281 is stated in the above rejection.

6. Applicants argue that Rondeau '367 teaches away from the claimed invention because Rondeau '367 is critical of low-temperature applications, such as combustion flame spray guns, because "the temperatures produced therein are usually relatively low and often incapable of

spraying materials having melting points exceeding 5000°F" while in Applicants' claimed invention, the temperature of the molten feed stock is not more than 5000°F.

It should be noted that the disclosure regarding the combustion flame spray guns, as stated in Rondeau '367, is to point out that such process is not capable of spraying materials having high melting point. However, this does not in any indicate that the electric arc spraying process of Rondeau '367 must be carried out at high temperature. Even though the process of Rondeau '367 is capable of spraying high melting point material, but the temperature of the process of Rondeau '367 would be depended on the material to be deposited, when Al and steel are the materials to be deposited, the temperatures are 950 and 1200°F (note Example VI).

7. Applicants argue that Gorynin '302 emphasizes that the high temperature attained by plasma arc spray techniques is what "causes diffusion of the sublayer into the substrate, resulting in a diffusion bond and strong adhesion of the sublayer to the substrate", thus, in order to modify Gorynin '302 by the electric arc spray teaching of Rondeau '367, one must contravene the explicit teaching of Gorynin '302 that the high temperature attained by plasma spraying.

As stated by Applicants, in Gorynin '302, the goal is to obtain a "strong adhesion" of the sublayer to the substrate, and such strong adhesion is obtained by the diffusion caused by the high temperature plasma spraying. However, as suggested by Rondeau '367, not only the electric arc method can be more economically operated, but the cohesive adhesive and hardness attributes to the coating on an article formed by this method are generally equivalent to or better than corresponding attributes for a coating on an article sprayed with powder using other thermal

spray devices (note paragraph bridging columns 2-3) (other thermal spray devices are previously discloses to include oxy-fuel gas type, plasma arc spray guns, etc., note column 1, lines 25-43). Thus, instead of using a plasma spraying process to obtain a good bond between the sublayer and the substrate through diffusion bonding as disclosed in Gorynin '302, it would have been obvious to one of ordinary skill in the art to use electric arc process, as suggested by Rondeau '367 to obtain a bonding which is equivalent to or better than a bonding obtained when plasma arc spraying process was used but with less cost and easier to operate.

8. Applicants again argue that Ishida '281 does not disclose that the substrate can be a web of a reticulate support or withing the gas flow passages of a honeycomb support.

This argument is not persuasive for the same reasons as stated above.

9. Applicants argue that there is no basis for the Examiner to contend that the honeycomb structure of the prior art is the same as a ferritic steel foam.

As defined in Hawley's Condensed Chemical Dictionary, 13th edition, metal foam is a cellular metallic structure, i.e. structure with cells. Since honeycomb structure has cells, it is considered the same as "foam".

10. Applicants argue that Fukui '455 utilizes chemical vapor deposition to apply the metal layer.

Fukui is not relied upon to teach the method to apply the metal layer. Fukui '455 is applied to teach the use of honeycomb structure, which is considered as the same as "foam", as the substrate.

11. The rejection of claims 40 and 44 over Gorynin '302 in view of Ishida '281 is maintained for the same reasons as stated above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.